

A FRAMEWORK FOR SOCIAL SECURITY ANALYSIS

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The public provision of pensions in the U.S. by means of the Social Security system is examined relative to conventional arguments for public intervention. The system is analysed in terms of income redistribution, the provision of insurance where private markets are not efficient, and the compelling of saving by individuals.

1. Introduction

The U.S. Social Security program is a large one.¹ Being explicitly inter-temporal in nature and concerned with individual risks, analysis of the program does not fit comfortably in the framework conventionally used to examine the income tax. In the next section, the basic structure of the retirement portion of the current Social Security program will be presented, including the over-indexing feature which has received much attention recently. Then, we shall inquire into the justifications for a program roughly of this sort. This discussion will also spell out the functions that Social Security can play in the current economy.²

2. Present structure

At the present time, earnings of employees up to the maximum taxable

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¹In fiscal year 1975, the Old Age and Survivors program received \$56 billion in contributions and \$2 billion in interest. Benefit payments were \$55 billion, with another billion for railroad retirement. For comparison, the U.S. individual income tax collected \$122 billion in the same year.

²This paper does not contain a detailed discussion of policy recommendations for the Social Security system. For a discussion of such reforms, including the views of the author, see Consultant Panel on Social Security to the Congressional Research Service (1976).

earnings base are subject to a tax of 9.9% for OASDI,³ half levied on the employer and half on the employee.⁴ The self-employed are taxed on all earnings to the same maximum, but at the rate⁵ of 7%. The maximum taxable earnings base is \$15,300 in 1976 and increases automatically with increases in average covered wages in the economy. The Social Security trust funds are invested in regular Treasury securities, special ones issued to Social Security which pay an interest rate equal to the average rate on Treasury debt of more than four years, and obligations of federally sponsored agencies. Except for some small items, this completes the revenue side of the system.

To examine the payment of benefits to retirees let us consider a single worker of either sex, age 65, who is receiving a first benefit check.⁶ To determine his benefit, the system examines the history of his earnings which have been subject to Social Security tax (not the history of taxes paid on this earnings record). From his earnings record is calculated an average monthly wage (*AMW*) counting only his best years. The number of years included will eventually be 35, 5 less than the number between 21 and 62, the age at which retired workers may first claim benefits.⁷ At present no earnings before 1951 affect benefits for most workers, and a much shorter averaging period is used to reflect this cutoff. To determine benefits that will be paid in any future year, one takes a function⁸ of the *AMW* and multiplies the result by the growth in the consumer price index from 1974 until the year of benefits:

$$B_t = f(AMW) \times CPI_t / CPI_{1974}. \quad (1)$$

Since the *AMW* is in nominal terms and the result is multiplied by *CPI* growth

³Old-Age, Survivors, and Disability Insurance. There is an additional payroll tax at present for health insurance. Current law legislates a 9.9% rate until 2010 and an 11.9% rate thereafter. The tax rate for the self-employed is not presently scheduled to change at the same time.

⁴Because the employee half, but not the employer half, of this tax is included in taxable income for the federal income tax, this distinction is not irrelevant.

⁵The self-employed get no deduction on the income tax for the payment of Social Security taxes. Until 1972, the self-employed tax rate was 75% of the combined employer and employee rates. Given the differences in deductibility on personal income tax and full deductibility of taxes on the corporate income tax, the historic 75% rule is a not unreasonable approximation to taxing different workers similarly.

⁶For simplicity I omit the rules determining the achievement of insured status, and so eligibility for benefits.

⁷For someone with fewer years of positive earnings, an appropriate number of zeros is included in calculation of the average wage.

⁸At present the function is defined up to the maximum *AMW* which a worker could possibly have. Whenever the maximum taxable earnings base is increased the function acquires a new piecewise linear segment with a lower slope. These slopes are not yet determined, depending on the inflation rate up to the time of wage base increase. The function is piecewise linear. After a horizontal section, the slope of the first increasing section is 1.2. Remaining slopes are lower and tend to decrease, reaching 0.2 for the last section determined in 1974. Assuming continued inflation the slope will approach zero as wages increase.

from a fixed calendar date (not the date of retirement), benefits are overindexed if one looks across successive generations of retirees. This overindexing and the expected level of inflation give rise to a major portion of the long range deficit projected for the system.

To complete this rough picture we need to consider the age at which benefits are collected, the definition of a retired worker, and the effects of the presence of dependents of the worker. Should a worker claim benefits between 62 and 65 the benefits are reduced by 5/9 of 1% for each month before age 65. Should a worker first claim benefits after age 65, the benefits are increased by 1/12 of 1% for each month after 65 (up to a maximum of 7%, since all workers 72 and over are entitled to benefits independent of retirement).

A worker is considered retired if he earns less than the allowed amount (\$2760 per year in 1976). This allowed amount is indexed and increases according to the same index of average annual wages used for increasing the maximum taxable earnings base. For each dollar of earnings above the allowed amount, benefits are decreased by \$0.50, until benefits are reduced to zero.⁹

Independent of adjustment for the age at which benefits are claimed, dependents can receive benefits which are functions of the benefits defined in equation one, called the primary insurance amount (*PIA*). An eligible spouse receives one-half the *PIA*. To be eligible, a spouse must be over 62, retired, and not entitled to a larger benefit on his or her own earnings record.¹⁰ In addition, dependent children, mothers of dependent children even if younger than 62, grandchildren, and parents can also collect on a worker's earnings record, all benefits being subject to a family maximum. Further, divorced wives can also collect benefits in some circumstances.

The Social Security system is generally described as being on a pay as you go basis. There are two senses in which this is correct, although the automatic provisions do not adjust benefits to the available level of revenues. One sense in which this is true is that at present there is a trust fund of approximately \$45 billion, very small relative to the estimated liabilities of \$2.4 trillion. A second sense in which the system is on a pay as you go basis is that Congressional attitude appears to be that it is appropriate to increase benefits whenever the system can finance such an increase over the following 75 years,¹¹ independent of any perceived need for a substantial fund at the end of the planning horizon.

In considering the system, benefits do depend on individual earnings histories. Benefits also depend on the financial balance of the system since Congress

⁹A worker can also collect in a month of low earnings independent of his earnings in other months.

¹⁰This isn't quite accurate in that the spouse receives the difference between $\frac{1}{2}$ the *PIA* of the worker and the *PIA* based on the spouse's own record. This distinction matters in complicated cases. In addition there is a decrease if the spouse is younger than 65.

¹¹Projections of the system for the next 75 years are made annually by the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds.

regularly alters some of the parameters of the system. Thus using either the cash flow of a single year across all workers or the cash flow of a single worker over his full (expected) lifetime based on current law is an inaccurate picture of the entire system. I will argue that it makes more sense to view the system on an individual lifetime basis with some adjustments for short-run considerations rather than as an annual tax transfer system with lifetime considerations.

3. Reasons for a Social Security program

Before considering how to modify the present Social Security program, it seems appropriate to ask why one should have a program with a shape roughly like that described above. Conventionally, there are four reasons for government tax-transfer programs – raising revenue, redistributing income, correcting market failures, and paternalism. The Social Security system is not being used as a significant net revenue generating device, so I shall consider the other three reasons. In addition, since the system has considerable insurance aspects, we shall consider the possibility that the government can provide insurance more efficiently than the private market. (The macro effects of the system will not be considered.)

3.1. Income redistribution

There are two different ways in which the Social Security system serves a redistributive function. Within generations, the benefit formula given in (1) yields a relationship between expected benefits and taxes paid which implies redistribution.¹² Since an annual income tax plus estate taxes do not result in ideal (second-best) income redistribution, there is room for an additional device to redistribute incomes. The progressive income tax uses a very imperfect measure of who is rich and who poor. It is imperfect in its measure of income and imperfect in concentrating on a year rather than a longer time in defining need or ability to pay. A measure of lifetime earnings is also imperfect, ignoring capital income and individual planning that is shorter than a lifetime (and thus failure to use full lifetime opportunities). However, the imperfections are different

¹²As a crude indication of the magnitude of redistribution at the margin, it is generally estimated that approximately half the revenue generated by an increase in the maximum taxable earnings base (with continued automatic adjustments) is returned in higher benefits to workers subjected to the higher tax. There are many complicating features in evaluating the actual degree of redistribution including expected length of life, age at entry into covered employment, presence of dependents, age of claiming benefits. For an examination of internal rates of return on taxes and benefits for different individuals, see Freiden, Leimer and Hoffman (1976).

and this seems likely to be a case where two instruments, both redistributing, will do better than either one alone,¹³

The second redistributive function is between generations. The increase in benefits associated with a small trust fund (relative to full funding) represents redistribution to earlier generations from later ones. The bulk of the anticipated redistribution has occurred in the start up of the system. This can be viewed as appropriate either because earlier generations are expected to be poorer on average or because the particular generations involved experienced the depression of the 1930s, making them particularly needy.

Both of these redistributive purposes appear fully legitimate, but neither, standing alone could justify a Social Security system like the current one. On purely redistributive grounds there is no reason to be paying any benefits to the wealthiest (i.e. those contributing most to the redistribution) much less giving them the largest pensions.¹⁴ Thus, we need to look further for justifications. Within a lifetime perspective, we will find reasons for benefit payments to those deemed most well off. My preference for a lifetime rather than annual perspective rests in part on the fact that the annual perspective makes very little sense of the redistributive pattern. To tax all workers, rich and poor, to give benefits to retirees both rich and poor would make little sense. Similarly to give larger benefits to those with less need (as measured by their lifetime earnings) would also make little sense. The lifetime perspective, viewing individuals both as taxpayers and benefit recipients will make sense of these patterns, as we will see below.

3.2. *Market failure*

Judged by the standard of an ideal market system covering all eventualities and all future periods, there are a number of market failures in the present US economy which a Social Security system could help alleviate. There are three such failures which will be discussed – the absence of safe investment opportunities (in real terms), the absence of real annuities, and the problems in insuring the risk associated with a varying length of working life.

Someone seeking to accumulate funds for retirement has an array of investment opportunities which do not appear to give a combination of a reasonable yield and a safe real rate of return. Particularly for the small investor who cannot develop a diversified portfolio of real investments, this shortcoming limits the ability to save for a relatively guaranteed consumption level in retirement.

¹³Of course one would expect to do even better by a suitable integration of the income tax and Social Security system, for example by subjecting benefits to income taxation. A priori, one cannot rule out the possibility that the optimum involves using one tool to redistribute to the rich so as to use the other one to redistribute more heavily to the poor.

¹⁴Arguments for the avoidance of the stigma of welfare might support a uniform pension, but not one with the appearance of the present system.

Even a mutual fund is subject to large value changes in a short time when the individual might want to convert wealth into an annuity. If this problem alone were felt to be the main issue, the answer would obviously be the issuance of indexed bonds by the government rather than the development of a large Social Security system. However, having the system lessens the importance of the absence of such bonds.¹⁵

Someone reaching retirement age with a capital sum might reasonably want to purchase a real annuity. While the annuity market is very well developed, it is not possible to purchase real annuities (i.e. annuities indexed to the *CPI*) in today's market. If this were the only reason for a Social Security program, the problem could well be more easily handled by having the government make this market or provide investment opportunities (indexed bonds) which would induce insurance companies to provide this asset. Once one has a Social Security program, it seems appropriate to have benefits paid as an indexed annuity.

The next risk to be discussed is a very large one for individual workers and not easily handled by alternative institutions. It is the risk associated with the length of working life. The risk comes from two sources – a possible decline in earning abilities (due to declining skills or health, for example) or a possible large increase in the disutility associated with working (again possibly from poor health or just general decline in strength or energy). The rough magnitude of the risk can be viewed by examining the large spread in retirement ages (in 1970 male labor force participation rates declined from 72.7 for 62 year olds to 47.1 for 65 year olds to 22.1 for 72 year olds) [U.S. Bureau of the Census (1973, pp. 31–32)]. Of course, without a theory of financial incentives for retirement these figures don't give the magnitude of the risks involved but do show that a wide variation must be present in the economy.¹⁶ The importance of the risk is increased by the double nature of the implications of an early need for retirement.¹⁷ By shortening the working life, early retirement shortens the period during which individuals accumulate savings out of earnings to finance retirement. Insofar as early retirement is not associated with an event that shortens life expectancy or insofar as there are dependents, early retirement lengthens the period of retirement which needs to be financed out of accumulated savings.

This risk is clearly very large. In addition any attempt to insure the risk faces severe moral hazard and adverse selection problems. Health itself is often difficult to monitor accurately. Inability to obtain a suitable job is also difficult

¹⁵Conventionally, market failures are identified by description of their cause. The cause of the absence of indexed investments is not clear to me. One possibility is the recentness of the increase in inflation rates and the presence of a lag in market development. Another is the desirability of intertemporal risk pooling for uncertainties in inflation rates. The absence of a conventional cause does not necessarily imply the absence of this market failure.

¹⁶To pursue the magnitude of the risk one would also want to examine the shift from full to part time labor.

¹⁷I will use the word retirement very loosely to represent both a full or nearly full cessation of work and a sharp decline in earnings even when their level remains high.

to monitor. Much of the need for retirement probably comes from an interaction of events without a single sharp health or unemployment problem, making monitoring far more difficult, being dependent on feelings of fatigue and interest in labor. Thus a private market cannot do very well with this problem.¹⁸ Social Security as insurance against declines in earnings is the natural social tool for dealing with the problem. Of course, this implies that a proper design of the regulations relating benefits to current earnings, past earnings, and age at retirement is a major part of the design of a good Social Security system. Such regulations must trade off the advantages of insurance (paying larger benefits when needed more) against the work disincentives thus created.¹⁹

3.3. *Paternalism*

A third line of justification for Social Security is that many individuals will not save enough for retirement if left to their own devices.²⁰ There are a number of different possible strands to this argument, all leading to roughly the same conclusion. One could peg the argument on the difficulty in obtaining suitable information for informed judgement on the need for savings for retirement. (One might argue that people severely overestimate the likelihood that they will be able and interested in working at full earnings level right up to death.) Citing the evidence on the difficulties people have in making decisions under uncertainty [e.g. Tumerin and Resik (1972), Tversky and Kahneman (1974), Kun-

¹⁸Compulsory insurance clearly avoids part of the adverse selection problem. (Part of the problem remains as long as different options are available, for example early retirement.) Collection of information for tax purposes and use of other tax tools create differences between public and private abilities to deal with the moral hazard problem of the financial incentive to retire early. This moral hazard problem is a necessary part of insuring the decline in earnings without full measurement of the causes of such a decline.

¹⁹This is a topic which clearly needs considerable research. On the theoretical side there has been little analysis of tax systems that simultaneously insure and redistribute. On the empirical side little is known of the response of labor supply to the different parameters that could be used in relating benefits to earnings and age. The use of some earnings test transfers an individual's income from the state of nature where he does earn to one where he doesn't. This is an essential element of insuring this risk. (Another element comes from basing benefits on average earnings over a fixed number of years rather than cumulated contributions or all earnings.) Since some of the risks involved lessen earnings without making full retirement desirable, perhaps the earnings test should be related to the decline in earnings (current earnings relative to *AMW*) as well as the absolute level of earnings.

²⁰Welfare has been available for a long time. At present the U.S. has the Supplemental Security Income Program, essentially a negative income tax for the elderly. The program has a 100% tax rate on unearned income and a limitation on wealth for eligibility. It is reasonable that people planning to collect SSI will have little incentive to save. Thus, to look for evidence of undersaving we should look to those with sufficiently high income that a decline to the standard of living financed by welfare is very large. Also a forced savings program would be a way of making those with large lifetime incomes but small retirement incomes pay for their own welfare payments when old.

reuther et al. (1977)], one could base the argument on efficiency in decision making rather than in information gathering. Third one might simply fall back on the factors that lead people to spend more now and less later than seems sensible. Some individuals might be aware of these factors and therefore not object to this compulsion (self-paternalism). Whatever the tack taken in explaining the phenomenon, the main line of this argument is insufficient individual savings. Before proceeding to the obvious conclusion that Social Security can play an important role as a forced savings program, let us examine the definition of and some evidence for the argument of inadequate private savings for retirement.²¹

In the static model of individual choice, a person makes a single selection of his entire consumption basket. Lack of rationality is normally associated with intransitivity of preferences in response to alternative choice situations. Thus, if a person prefers *A* to *B*, *B* to *C*, and *C* to *A*, we are suspicious of his ability to make decisions for himself. This sort of irrationality does not seem central for the savings issue. A somewhat simpler type of irrationality to observe would be a situation where decisions are made at several points in time and these decisions appear to be inconsistent with a single maximization procedure (and we have reason to think that circumstances have not changed sharply). For example, one-fifth of ordinary life insurance policies in force fewer than two years voluntarily lapse.²² This results in individuals having purchased exceptionally expensive one or two year term insurance policies unless the commission to the agent benefits the purchaser.²³ Unless there is reason to believe that this large a fraction of purchasers have significantly changed economic or family circumstances or close relations with the agent, it seems appropriate to conclude that some irrationality is present either at the first purchase date or the date when the policy is allowed to lapse. In the savings area, however, it is difficult to find pairs of inconsistent decisions.²⁴

A third approach to the question is methodologically sharply different from the other two. The first two situations did not involve enquiry into the preferences being exhibited but rather into the consistency of their maximization. A third approach to this issue is to ask whether any sensible person would act in a

²¹To analyze this question properly, longitudinal data on individual savings should be subjected to detailed analysis. For an argument that rule of thumb behavior explains aggregate data as well as lifecycle theories, see Marglin (1975).

²²Life Insurance Fact Book (1975, p. 52). This behavior is probably affected by the way individual life insurance is sold.

²³This example reflects decisions which are part of a long-run plan, not repeated opportunities to make the same decision which might reasonably result in different decisions since past consumption might affect current preferences, even if in a fully foreseen manner.

²⁴One not terribly good indicator of the situation is whether people regret earlier decisions (with regret suitably reflecting knowledge available at the earlier decision date). It would be interesting but not necessarily conclusive to interview the retired to inquire whether they wished they had saved more. (And to interview the young on the extent of their awareness of later needs.)

particular way. This line of approach seems to be behind some attitudes toward some consumer product safety issues – no sensible person would buy a crib with a noticeable probability of strangling a baby. In addition to being foreign to conventional economic methodology, this line of argument standing alone is unappealing in that it is lacking any natural limits on the policies one suspects could be justified.²⁵ I do not propose to enter into a discussion of the appropriate use of paternalism arguments. It seems to me that they are occasionally appropriate and that this may be one of those cases.

To use this third line (since I have little evidence on the applicability of the first two), I need to argue that the savings patterns of a sizeable fraction of Americans do not seem to be sensible.²⁶ Ideally one would like to examine individual income, wealth, and savings histories. I know of no empirical studies on savings using longitudinal data and so shedding light on the fraction of the population for whom a life-cycle model seems appropriate.²⁷ As an easily available substitute we shall argue that many persons do little saving in absolute terms by examining the various Social Security surveys which show a very large fraction of the aged population with little income from assets and small or no holdings of financial assets (although home ownership is widespread). This evidence is suggestive; however, in the absence of income figures it is not clear how many people ought to have very little wealth. Therefore we will also examine the distribution of wealth-income ratios for different income brackets, based on data from the Longitudinal Retirement History Survey of 1969 and the Parnes data for those near retirement age.

Table 1 reports on older surveys giving the percentage of aged beneficiary units reporting receipt of income from financial assets and retirement pensions other than OASDHI. As can be seen, a large fraction of the aged (generally at least 20%) do not report any such income. It is also interesting to note that the overwhelming majority (on the order of 80%) report no contributions from relatives. While one would expect Social Security to displace such contributions,

²⁵Of course a similar situation holds with the fundamental welfare theorem which shows the equality of the sets of competitive equilibria and pareto optima. Currently the theorem is normally interpreted as describing a set of circumstances where no government action (other than income redistribution) is warranted. The theorem can equally well be read the other way, as showing that the market can't do better than a planner, so why bother with markets? Just to be clear, I don't think the theorem contains everything relevant to a choice between market and nonmarket solutions. I am merely indicating the use that could be made of the theorem as conventionally presented and in the absence of further discussion. Similarly in any particular situation one would want more discussion than merely the conclusion that paternalism can be justified in some circumstances.

²⁶Someone accepting the conclusion but not liking raw paternalism can, of course, interpret the results as showing a lack of information on the nature of the risks that individual earners face and an enormous difficulty in conveying the magnitude of the risks in a convincing manner. The policy conclusions of this tack would be roughly the same.

²⁷Of course, the model may be appropriate for most wealth without being appropriate for most persons. The former may reflect on the efficiency of capital markets while the latter is relevant for the need for Social Security.

these figures from the early 1940s suggest that there was not very much in the way of such contributions to be displaced.²⁸

The Social Security system conducted a survey of the aged in 1968 asking questions about conditions in 1967 [Bixby et al. (1975)]. The sample (of 8,248 interviewees) represents an estimated 15,800,000 aged units where a unit is a single person or a couple with at least one member at least 65 years old.²⁹ In the survey 40% of couples and 56% of nonmarried persons reported no money³⁰ income from assets.³¹ Income flows from sources other than assets, OASDHI, and earnings³² are not widely reported (other public pensions were reported by 10% of units, private pensions and annuities by 14%, veterans benefits by 10% unemployment insurance and public assistance by 13%). Thus, it seems natural to conclude³³ that a large fraction of units have little more than Social Security or are relying on a continued ability to earn throughout their lifetimes. One would expect that rational lifetime accumulation patterns would give much

²⁸One is naturally suspicious of answers to questions about whether one is receiving financial support from one's relatives. There is less reason to be suspicious about the question: do you give support to your relatives? The Longitudinal Retirement History Survey asked this question in 1969 to households aged 58–63. While the survey was sufficiently recent that the presence of Social Security may well have affected the answers, the ages of the parents of 58–63 year olds are sufficiently great that the availability of Social Security for the children may be more important than its availability for their parents. Without details on the number of children per parent, the comparison of these numbers with those in table 1 is not immediate. Nevertheless they are supportive of the conclusion that Social Security transfers are only offset in small part by decreases in private transfers. The results are summarized in the following table. The percentages are percentages of households with living parents.

	% with parent living in household	% with parent not in household and giving some support*
Married couples		
Men	5	12
Spouse	9	13
Men, no spouse present	35	19
Women, no spouse present	31	12

*A small number report complete support; about one-half of remainder report making regular contributions and one-half giving occasional support.

Source: Janet Murray (1976, table 75, p. 92).

²⁹38% of the units are couples; 15%, nonmarried men; and 47%, nonmarried women.

³⁰Over 75% of couples and 35–40% of nonmarried persons do own their own homes (Bixby et al., p. 105).

³¹(Bixby et al., table 2.2, p. 14). The pattern was the same for 65–72 year olds and for those 73 and over (table 2B).

³²27% of units – 46% of couples and 15% of nonmarried persons reported earnings.

³³It seems unlikely that a great deal of the wealth of the aged (other than houses) is in a form which does not generate income.

Table I
Percent of units with income from specified sources.

Type of beneficiary unit and survey	Earnings ^a	Retirement pensions other than OASDHI	Interest, dividends, rents	Unemployment insurance ^a	Public assistance	Contributions by relatives ^b
Married couples						
1941-42 surveys:						
Philadelphia-Baltimore	24	25	44	25	7	9
St. Louis	38	18	42	13	7	9
Birmingham-Memphis-						
Atlanta	44	15	33	18	3	13
Los Angeles	39	12	52	14	21	15
1944 middle-sized Ohio cities	57	16	56	2	7	16
1946 Boston	27	22	70	2	16	17
1949 Philadelphia-Baltimore	24	24	55	5	6	22
1951 National Beneficiary Survey	36	23	50	4	12	6
1957 National Beneficiary Survey	38	25	59	2	7	5
1963 Survey of the Aged	33 ^c	27	65	2	6	3
Nonmarried men						
1941-42 surveys:						
Philadelphia-Baltimore	28	21	35	26	10	5
St. Louis	36	21	31	7	11	7
Birmingham-Memphis-						
Atlanta	52	8	23	16	4	16
Los Angeles	32	7	34	12	39	7
1944 middle-sized Ohio cities	48	15	40	2	9	14
1946 Boston	20	22	61	1	22	9
1949 Philadelphia-Baltimore	23	25	43	6	17	14
1951 National Beneficiary Survey	28	16	34	2	22	5
1957 National Beneficiary Survey	29	19	38	2	14	5
1963 Survey of the Aged	24	18	50	1	10	2
Nonmarried retired women						
1941-42 surveys:						
Philadelphia-Baltimore	21	20	51	28	8	7
St. Louis	30	22	37	11	7	10
Birmingham-Memphis-						
Atlanta	39	6	44	6	4	22
Los Angeles	35	5	50	9	32	13
1944 middle-sized Ohio cities	41	2	45	1	14	27
1946 Boston	22	21	60	1	24	10
1951 National Beneficiary Survey	27	12	45	2	20	9
1957 National Beneficiary Survey	36	11	53	1	13	12
1963 Survey of the Aged	34	15	56	2	10	4
Widows						
1941-42 surveys:						
Philadelphia-Baltimore	17		56		6	11
St. Louis	9		44		5	16
Birmingham-Memphis-						
Atlanta	36		46		0	21
Los Angeles	17		72		10	17
1944 middle-sized Ohio cities	35		58		5	34
1946 Boston	15		69		18	18
1951 National Beneficiary Survey	14	2	49		13	10
1957 National Beneficiary Survey	15	2	52		12	11
1963 Survey of the Aged	17	3	58	d	8	5

Source: U.S. Department of Health, Education and Welfare, (1970, table 7, p. 61).

^aFor married couples, percent of married men.

^bRelatives and friends outside the household.

^cIncluding couples with either or both members reporting earnings: 50 percent.

^d0.5 percent or less.

wider financial asset holding in the economy since models of lifetime accumulation do not ordinarily imply savings for retirement which is this small except with very large discount factors. We will return to the appropriate size of accumulated wealth below. Another measure of the magnitude of private accumulation is that only 17% of the aged units report that they receive at least 20% of their income from assets. 44% of couples and 54% of the nonmarried report receipt of at least half their income from OASDHI (Bixby et al., table 2.6, pp. 19 and 20). Given the relatively small size of the Social Security system in 1967,³⁴ it seems unlikely this pattern would have evolved from sensible savings and normal risks. Considering reported financial assets, 55% of all units reporting reported less than \$1000 in financial assets (approximately 75% of interviewees reported on their financial assets (Bixby et al., table 6.9, p. 115)).

The Social Security Administration has surveyed a sample of 20,260 individuals who applied for benefits between January and June 1970 [U.S. Department of Health, Education and Welfare (1973)]. The sample was analyzed separately for those whose benefits were payable at award and those who had benefits postponed (i.e. those applying primarily for Medicare, but not eligible for benefits, presumably because of earnings). Of those with payable benefits 45% of couples, 69% of nonmarried men and 53% of nonmarried women did not report any asset income. Of those with postponed benefits 40% of couples, 53% of nonmarried men and 42% of nonmarried women did not report any asset income.³⁵

Next we shall turn to data of individual wealth-income ratios to examine the accumulation patterns by income class. There are two points to be gathered from this examination. Inadequate savings appears to be a phenomenon which is widespread, not confined to the bottom of the income distribution. Secondly, insofar as wealth-income ratios do rise with income level there may be a declining need for Social Security in the future if real as well as relative position in the income distribution affect private accumulation.³⁶

Before considering the data let us briefly consider the wealth-earnings level which would be sensible for a 60 year old. The central case we'll analyze is that of an individual who works and saves for 30 years³⁷ (ages 35-64) and is then retired for 15 years, dying precisely on schedule. We will relate the wealth-

³⁴In 1967 average monthly retirement benefits for male workers only were \$92.50, for female \$71.90, and for couples \$144.20. By 1973 these numbers had increased to \$180.10, \$146.00, and \$276.70. Source: Social Security Bulletin (1973, table 29, p. 59).

³⁵(USDHEW, table 1, p. 20). These numbers are restricted to those reporting on all sources of income.

³⁶One complication in examining individual choice of current savings patterns is the presence of Social Security. Thus, this quick look at earlier asset and income levels gives some perspective on the possibility that Social Security is responsible for a very large fraction of the low savers which is present.

³⁷Longer periods of savings would give higher wealth-earnings ratios at age 60 to finance a given replacement of net earnings with a constant savings rate.

earnings ratio at age 60 to savings rates, interest rates, and earnings growth rates (all calculations in real terms). Then we can relate different parameters (and their implied wealth-earnings ratios) to the replacement ratio (annuity/earnings) that can be financed.

To start, let us consider a world of no wage growth and no interest. Since there are two working years for every retirement year, a savings rate of 1/3 would finance a constant income flow net of savings. However, this ignores earnings costs and income taxes. A savings rate of 1/4 would give an annuity equal to 2/3 the level of gross income less savings. That probably corresponds fairly closely to a steady net income pattern, allowing for taxes and the costs of earning. With 25 years of accumulation of 1/4 of income, the wealth-earnings ratio at age 60 would be 6.25. Continuing with the assumption of constant earnings, let us now consider the case of positive interest. If saving is going on continuously (at a constant rate s) and interest is compounded continuously at rate i , we have wealth at age t satisfying

$$W_t = \frac{sY}{i} (e^{(t-35)i} - 1), \tag{2}$$

where Y is earnings. If we consider the constant annuity that can be financed for 15 years out of W_{65} , we have

$$A = iW_{65} \frac{e^{15i}}{e^{15i} - 1}. \tag{3}$$

Combining these equations we can relate both the replacement ratio ($A/(1-s)Y$) and the wealth income ratio at 60 to the interest rate,

$$\frac{A}{(1-s)Y} = \left(\frac{s}{1-s} \right) e^{15i} \left(\frac{e^{30i} - 1}{e^{15i} - 1} \right), \tag{4}$$

$$\frac{W_{60}}{Y_{60}} = \frac{s}{i} (e^{25i} - 1). \tag{5}$$

To achieve a replacement ratio of $\frac{2}{3}$ we would need a savings rate satisfying

$$s = \frac{2}{2 + 3e^{15i} \left(\frac{e^{30i} - 1}{e^{15i} - 1} \right)}. \tag{6}$$

The matching savings rates and wealth income ratios are shown in the following table.

interest rate	0	0.01	0.02	0.03	0.04
savings rate	0.25	0.21	0.17	0.14	0.12
wealth/income at 60	6.3	6.0	5.6	5.3	4.9

Next let us consider the effect of growing earnings. Assume that earnings have grown at the rate g . With a fixed savings rate consumption grows at the same rate. If consumption after retirement were to grow at this rate also, then the above calculations are unchanged, with i being the excess of the interest rate over the growth rate of wages. While this pattern might come from some optimal savings formulations, there are reasons to consider slower growing consumption after retirement. In any case we are interested in examining assumptions which yield low levels of desired wealth. As an example of this, let us assume that consumption is constant after retirement. Since consumption has grown steadily in the past, there is now a problem in finding a benchmark level of consumption with which to compare postretirement income. One possible value, which (given smooth earnings growth) captures a sense of the standard of living in the period before retirement, is net earnings at age 60. Thus, we now have the following relations between the annuity, wealth, and income: first, the size annuity that can be financed out of wealth at retirement, which remains (2) above; second, the growth of wealth based on savings out of growing income (with $i > g$),

$$W_t = \frac{s Y_{35}}{(g-i)} e^{-35g} e^{it} [e^{(g-i)t} - e^{(g-i)35}]; \quad (7)$$

and third the desired level of A ,

$$A = \frac{2}{3} Y_{60} (1-s). \quad (8)$$

Combining these we can again calculate the savings rate and wealth-income ratios for different interest rates assuming a 2% growth rate for earnings.³⁸

interest rate	0.02	0.03	0.04
savings rate	0.21	0.17	0.14
wealth/income at 60	5.2	4.9	4.6

³⁸Analysis of Social Security data in Consultant Panel on Social Security (1976) found earnings growth for an individual between ages 35 and 60 approximately equal to the growth of average earnings in the economy.

The calculations in the two tables above suggest that an individual with a known 2% earnings growth pattern and a plan to retire at 65 and die at 80 should have a wealth-earnings ratio in the neighborhood of 5 to have a postretirement consumption level roughly equal to his preretirement consumption level. However, some individuals won't like this plan and all individuals are eligible for Social Security, welfare and (presently) SSI benefits after 65 and are subject to considerable uncertainties. The presence of welfare and SSI means that low income people might reasonably plan to have low wealth to collect welfare or SSI. Thus, any test of the hypothesis that sensible savings patterns are absent for a large fraction of the population will have to consider income levels before retirement sufficiently high that a plan to have a living standard which falls to the level supported by welfare and SSI does not seem reasonable (i.e. this result is unlikely to be the outcome of a careful plan). The presence of Social Security benefits does decrease the needed wealth to carry out the plan described above. The earlier the observations on the population, the smaller the Social Security system has been. The observations discussed below are from 1969 and 1971, before the large increase in 1972, although some increase might reasonably have been foreseen. In 1976 single workers with steady earnings history and income between median earnings and the taxable maximum commonly received a benefit equal to 30 to 40% of earnings at age 65 [Consultant Panel on Social Security (1976, p. 8)]. Those above the taxable maximum receive a smaller percentage of total earnings. A married couple with just one worker receives a 50% higher percentage of previous wage. Since Y_{65}/Y_{60} is about $(1.02)^5$ or 1.10, expectations of this level of benefits would approximately halve the wealth need of a single person (or two-worker couple) and decrease by $\frac{2}{3}$ the need of a one-worker couple. Before 1972, Social Security benefits were approximately 20% smaller, in real terms. They were even smaller in earlier years when accumulation was going on. It is not clear how optimistic one should expect savers in their 50s to have been in the 1960s. From these considerations, ratios in the range of 2 to $2\frac{1}{2}$ seem possibly reasonable. Similar arguments imply that private pensions, especially when vested, significantly reduce the amount of wealth an individual needs. Since data on expected pension benefits were not available, calculations are done separately for those with and without pensions.

Now let us turn to the uncertainties. The most obvious one is uncertainty about length of life. While Social Security is indexed to the *CPI*, annuities indexed to the *CPI* are not available in the market. Variable annuities are available, but anyone familiar with recent stock market history recognizes these as an imperfect hedge against inflation for time periods on the order of a few years. This greatly increases the desirable wealth level. For example, someone planning on a sufficient annuity for precisely 20 years, rather than 15, needs a 25% higher wealth at retirement. Someone also hedging against inflation would presumably (but not necessarily) increase wealth further. One hedge against inflation is the holding of consumer goods. In the ownership of homes this is

common. However, it is difficult to draw down much of the equity in a house to finance consumption during retirement.³⁹ A second element to be considered with couples is that it is not twice as expensive for two to live as for one. Thus, the likelihood of a significant period with a single survivor raises the necessary wealth to finance a given standard of living (relative to the same aggregate expected years of life with simultaneous deaths). From Social Security, the one worker couple receives one and a half times the real benefit they will receive when there is a single survivor. These considerations probably increase the sensible ratio at least into the range of $2\frac{1}{2}$ to 3, with the ratio increasing as one moves above the taxable maximum for Social Security.

The second major uncertainty is over length of working life. Unfortunately, this issue is very complicated to analyze for purposes of this argument. There are two elements at work. One is that there is considerable uncertainty for any individual about the length of his desired or feasible working life.⁴⁰ Generally we would expect this uncertainty to noticeably increase planned wealth at age 60. The second is that individuals differ in the risks that they face and some of these differences would reasonably be known well before age 60 and so capable of affecting savings decisions.

Many elements in addition to a steady consumption level after retirement enter into a sensible wealth accumulation pattern. In addition to redistributing planned consumption, wealth serves to cushion unexpected large expenditures (for example, legal or medical expenses not covered by insurance) and unexpected decreases in earnings (from unemployment or disability). The presence of the former after retirement raises the desired wealth. The presence of both risks before retirement raises desired savings rates, but depending on the actual occurrence of these events, may raise or lower the level of wealth an individual has at age 60. The discussion above has omitted early working years (before age 35), inheritances received or expected, planned bequests, and expenses for children.⁴¹ All of these elements add uncertainty to the interpretation of the data.

³⁹I have been told that in England one can readily sell ownership of a house conditional on one's death.

⁴⁰The large decline in labor force participation of 62-65 year olds when retirement benefits became available is an indication of sizeable risk or lack of planning. Because of actuarial reduction, there is little substitution effect associated with the choice of early retirement over retirement at age 65. In 1975, 61% of all benefit awards moving to payment status were reduced for early retirement. Source: Social Security Bulletin (1976, table Q5, p. 83).

⁴¹Consideration of these various functions served by accumulated wealth makes clear that an individual would not want all his planned retirement consumption in a wealth form which was inaccessible before retirement. As the level of Social Security benefits gets close to the optimal retirement consumption level, Social Security becomes an inefficient way to hold wealth. Thus, there is a clear efficiency justification for the conventional description of Social Security as aiming for a floor on retirement income rather than the optimal individual level. Variation across individuals in the desired level of savings for retirement and the greater ease of additional positive savings rather than negative savings is a second reason for Social Security to be a floor.

Serious consideration of these issues needs to be based on individual savings patterns described in longitudinal data. Here we can only be suggestive.

Thus, in examination of the data it should be remembered that it is reasonable for some fraction of the population to have low wealth-earnings ratios even at age 60. Perhaps the reader should form an opinion on a plausible fraction of the population below different wealth-income ratios before looking at the data.

Now let us consider two bodies of data⁴² shedding light on this issue. Here we will consider the percentages of married men in an income bracket with wealth-income ratios below 2 and below 1.⁴³ To set the discussion, in table 2 are presented the percentages of males aged 58-63 in 1969 by marital status and private pension coverage. Considering only married men, we will be considering over

Table 2
Distribution of 58-63 year old males by marital status and private pension coverage, 1969.

	Married	Not married
Covered	46.0%	5.9%
Not covered	40.1%	7.9%

Source: Longitudinal Retirement History Survey. Those listed as not covered answered 'no' to questions of pension coverage based on present, previous, and longest jobs.

85% of the males in this age group, slightly more than half of whom have some coverage in pensions other than OASI. We will consider the groups with and without pensions separately since the data do not contain the size of the anticipated pension. There are three complications in performing this analysis - the definition of wealth, the definition of income, and the treatment of those for whom either income or wealth datum is not available.⁴⁴ For wealth, the data report net worth including all assets (except, of course, the value of public and private pensions).⁴⁵

Ideally one would want a measure of lifetime earnings. Since this ideal was

⁴²I am grateful to Joseph Quinn for providing the data from the Longitudinal Retirement History Survey and to Alicia Munnell for that from the Parnes data.

⁴³The nonmarried men report considerably lower wealth-earnings ratios to the Longitudinal Retirement History Survey.

⁴⁴In addition there is the difficulty in interpretation from the under-reporting of wealth in addition to nonreporting by a fraction of the population.

⁴⁵The measure which excludes net equity in a house is in some ways more relevant. For most categories the fraction with a wealth net of house-income ratio below one is very similar to the fraction with a wealth-income ratio below two.

not available, the tables report on calculations with three different income definitions. In tables 3 and 4, two different definitions are provided. Earnings 1968 is the sum of reported earnings for husband and wife in 1968.⁴⁶ Full earnings 1969 is an estimate of earnings obtained from whatever earnings rate figure for the man was given (hourly, weekly, monthly, or annually) by multiplying by the number of full-time units in a year. This significantly decreases the number for which an income figure is unavailable and sharply raises the percentage with low wealth in the bottom income category. A third measure, reported in table 5, is based on family income rather than earnings. (Given an assumed interest rate, the wealth-income ratio can be converted to a wealth-earnings ratio.) This disadvantage is somewhat offset by having up to six years of income observations, 1965-1970, on the individuals. The income figure reported is the average of these nominal income figures, using only those that are positive and available.

For some individuals, income data are not available. In tables 3 and 4 these individuals are reported separately. In table 5 they have been excluded from the data set.⁴⁷ For some individuals a wealth estimate is not available. In constructing tables 3 and 5 these individuals are excluded from the data set. This produces the same answer as would the assumption that the distribution of wealth-income ratios for those out of the sample is the same as those in the sample. This seems the most appropriate assumption. In constructing table 4, all those without wealth estimates were assumed to have wealth-income ratios in excess of two to generate a lower bound.

If we consider the central 60% of the population in terms of annual earnings in table 3 something on the order of 10-15% of the population have a wealth-earnings ratio below one and on the order of 30% have a ratio below 2. Considering the six year average income measure, about 20-30% have a wealth-income ratio below 1 and 40-50% have a ratio below two.⁴⁸ These calculations are very crude. In the absence of more thorough analysis of individual savings, they are suggestive that a sizeable fraction of American workers would not follow sensible savings plans in the absence of Social Security.⁴⁹

Forcing individuals who are saving rationally to save a little more has little welfare cost by the usual envelope argument.⁵⁰ Forcing those saving too little to save more would have a large effect since the envelope argument is not

⁴⁶Those reported as being out of the labor force in early 1969 when interviewed have been put in the not available category.

⁴⁷The sample used to construct table 5 excluded men for whom the data set was not complete on other variables too.

⁴⁸The presence of considerable random variation in individual earnings may be a part of the differences in these estimates.

⁴⁹The desirability of individual savings at higher levels than would occur without government action does not necessarily imply the desirability of higher aggregate capital accumulation, since the intergenerational redistributive aspects of the program will naturally have capital accumulation implications.

⁵⁰I am considering efficiency given income distribution. Even with individual rationality aggregate savings may not be optimal if it is desired to transfer resources between generations.

Table 3
 Percentage of married men 58-63 with low wealth-earnings ratios in 1969 by earnings level and private pension coverage status.
 (Numbers in parentheses are percentage of population in earnings bracket; those for whom wealth information is not available are excluded from calculations)

Earnings level	Full earnings 1969 ^a				Reported earnings 1968 ^a			
	Not covered ^b		Covered ^b		Not covered		Covered	
	≤1 ^c	≤2 ^c	≤1	≤2	≤1	≤2	≤1	≤2
Under 2500	74.7	76.4	88.0	88.3	28.5	33.7	10.2	15.9
2500-4999	26.4	29.6	(20.6)	(28.3)	(8.4)	(16.5)	(8.6)	(1.8)
5000-7499	14.6	30.0	(21.1)	(20.0)	25.2	42.4	(14.8)	23.3
7500-9998	13.1	26.8	(10.3)	(31.3)	(27.4)	(21.4)	(17.7)	19.4
10000-12499	7.7	17.6	(6.2)	(22.4)	(11.7)	(11.7)	(13.3)	31.8
12500-14999	0.0	11.8	(1.7)	(18.6)	(8.1)	(8.1)	(5.8)	25.2
15000-24999	2.7	13.7	(3.7)	(6.5)	(4.7)	(4.7)	(2.1)	18.8
25000 and up	2.6	13.1	(2.2)	(6.6)	(2.0)	(2.0)	(1.5)	9.3
Not available	-	-	(6.0)	(3.2)	-	(29.0)	-	(21.1)

Source: Longitudinal Retirement History Survey.

^aEarnings measure.

^bPension coverage

^cwealth-earnings ratio

Table 4
 Percentage of married men 58-63 with low wealth-earnings ratios in 1969 by earnings level and private pension coverage status.
 (Numbers in parentheses are percentage of population in earnings bracket; those for whom wealth information is not available are included in the calculations, and assumed to have wealth exceeding twice income)

Earnings level	Full earnings 1969 ^a			Reported earnings 1968 ^a					
	Not covered ^b		Covered ^b	Not Covered		Covered			
	≤1 ^c	≤2 ^c	≤1 ≤2	≤1	≤2	≤1 ≤2			
Under 2500	53.2	54.4	57.4	57.9	20.2	23.9	7.6	11.8	(1.8)
2500-4999	19.5	21.9	15.8	30.0	19.4	32.6	18.9	30.1	(5.8)
5000-7499	10.3	21.2	10.8	22.0	15.4	27.3	13.7	26.8	(16.9)
7500-9998	8.0	16.3	6.6	15.7	10.1	23.6	9.7	23.2	(18.6)
10000-12499	4.5	10.2	3.5	12.2	9.7	19.9	9.3	24.8	(15.0)
12500-14999	0.0	8.5	3.7	13.3	4.5	16.8	4.2	18.4	(8.3)
15000-24999	1.7	8.7	0.5	4.1	3.9	10.3	1.4	12.3	(9.7)
25000 and up	1.3	6.6	1.3	3.9	3.0	11.8	0.9	5.7	(2.8)
Not available	-	-	-	-	-	-	-	-	(21.1)
									(29.0)

Source: Longitudinal Retirement History Survey.

^aEarnings measure.

^bPension coverage.

^cWealth-earnings ratio.

Table 5
 Percentage of married, nonretired men 58-63 with low wealth-income ratios in 1971 by average income level 1965-70 and private pension coverage status.
 (Numbers in parentheses are percentage of covered or not covered sample population in earnings bracket; those for whom wealth information is not available are excluded from the calculations)

Income level	Not covered ^a		Covered ^a	
	≤ 1 ^b	≤ 2 ^b	≤ 1	≤ 2
Under 2500	43.9	52.6	66.7	66.7
2500-4999	42.7	57.3	43.5	60.9
5000-7499	32.6	55.0	41.3	58.7
7500-9999	25.4	41.3	23.9	50.0
10000-12499	15.8	50.0	20.3	36.2
12500-14999	13.0	21.7	9.8	31.1
15000-24999	10.0	20.0	7.8	34.4
25000 and up	0.0	0.0	13.3	33.3

Source: Parnes data.
^aPension coverage.
^bWealth-income ratio.

applicable. Thus, 20% of the population with inadequate savings seems to leave room for a considerable gain in social welfare.

3.4. *Efficiency*⁵¹

As with any other industry, the costs of providing insurance can be conceptually divided into those of providing the product and those of convincing would-be purchasers to buy. When selling costs are large and a relatively easy device (payroll tax) for government compulsion is available, having a compulsory program may save a significant portion of the total costs of the product.⁵² Before turning to the costs of compulsion let us briefly consider the potential for benefits.

In the Social Security Program, administrative costs normally run about 2% of receipts or payments, which are both about the same size [Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds (1967, table 3)]. Of course, this doesn't include the costs to employers self-employed, and IRS in handling their sides of the financial transactions. At a guess, total transaction costs are probably less than twice the costs to the Social Security Administration. In contrast, in 1974 17% of total outgo of the life insurance industry was for operating expenses, with 10.1% for home and field offices and 6.9% for commissions to agents [Life Insurance Fact Book (1975, p. 58)]. These numbers represent an averaging of much higher numbers for individual policies and much lower numbers for group policies, with the latter probably comparable to Social Security. For example, for 8 leading companies expenses as a percentage of premiums averaged 6% for group policies and 27% for ordinary policies [Ralph Nader (1973, table C, p. 18)]. For a compulsory program to represent a gain in transaction costs, the compulsory program must be sufficiently close to the desired package that a sizeable fraction of the population does not purchase private insurance policies in addition. If the public program displaces no group plans and displaces individual policies for at least 15% of the population then there will be a gain in transaction costs⁵³ (ignoring the differences in policies selected and the provision of policies to those previously without policies). Given these numbers on transactions costs, let us consider the full range of efficiency issues.

Among the costs of a compulsory insurance scheme there are three aspects of efficiency to examine—the provision of different commodities to different buyers, the development of new products, and the levels and changes in efficiency in production. Let us consider these in reverse order. Given the large

⁵¹Considerations of efficiency in the provision of insurance are relevant for several parts of the program, even if not for all parts.

⁵²The argument for efficiency gains of compulsion does not imply any superiority of public management of the compulsory program over private management of such a program.

⁵³Since $(0.15) \text{ times } (0.27) \text{ equals } 0.04$, the assumed transaction cost of Social Security.

size of selling costs relative to other costs and the easily understood technology there is little reason to expect that the absence of competition would seriously affect the relative cost-effectiveness of Social Security and private insurance. Second, the nature of insurance makes the introduction of new products a not terribly important issue. While there may be new types of policies introduced, these may often be due to changes in demand rather than inventions of previously unthought of policies.

Thus we are left with the issue of public choice of policy relative to private choice. There are two separate issues here – the provision of a relatively uniform public program where a private program would show more variation in either choice of policy or quantities purchased and the selection of a public program which might not be the optimal public program.

It is difficult to easily assess the importance of these items, but their size is kept limited by three factors. One is that the private market continues to exist. This doesn't help those compelled to have more than they should. It does help those provided with significantly too little insurance, although in this case the efficiency gains from public provision may be largely (or fully) lost. Second, a large part of the private market is in group policies which have limited individual variation, although they can differ from group to group. Third, the selection of an optimal insurance package is a difficult and complicated matter, requiring sophistication in both data evaluation and decision making.⁵⁴ Insofar as this is not reasonably well done by individuals, a sensibly chosen public program may do better and may economize on decision making. These are issues that are impossible to settle a priori and would require detailed examination of individual insurance portfolios to evaluate properly. This consideration of the narrowly economic aspects of compulsory savings and insurance does not mean that the issues associated with the presence of compulsion per se are uninteresting or unimportant.

4. Concluding remarks

The discussions of the previous section seem to me to justify a program which would combine forced savings, insurance of earning capabilities, and redistribution. Such a program could be achieved by limited modification of the existing Social Security system. This is not the place for a detailed analysis of particular suggestions to change Social Security. However, let us briefly consider a few proposals to indicate the relevance of the three aspects we have identified.

Discussion of the optimal size of the Social Security program needs to relate the efficiency of forced savings to that of private savings, recognizing that some people may save too little but that for those with adequate savings having the wealth unavailable for other uses will generate some inefficiency. Proposals to

⁵⁴The same problems also arise in the selection of a savings rate.

allow individuals to opt out of Social Security must decrease its redistributive purposes or continue taxation for redistributive purposes of those who do opt out. Dropping the earnings limitation for workers over 65 decreases the ability of the system to provide insurance for the random length of working life. Of course the moral hazard (or adverse incentive) aspect of these taxes is relevant for design of the optimal retirement test, with a balancing required between the decrease in risk bearing and the adverse incentives generated.

Reform of the Social Security system seems to me to be an important policy question. Such reform would benefit from expansion of the ongoing theoretical and empirical work on intertemporal equilibria with uncertainty.

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